



CONTAINS NO CBI

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DIC. ENV. CONTROL
OFFICE



000622643N

90-890000453

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Comprehensive Assessment Information Rule
REPORTING FORM

When completed, send this form to:

Document Processing Center
Office of Toxic Substances, TS-790
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460
Attention: CAIR Reporting Office

For Agency Use Only:

Date of Receipt: _____

Document
Control Number: _____

Docket Number: _____

SECTION 1 GENERAL MANUFACTURER, IMPORTER, AND PROCESSOR INFORMATION

PART A GENERAL REPORTING INFORMATION

1.01 This Comprehensive Assessment Information Rule (CAIR) Reporting Form has been completed in response to the Federal Register Notice of..... [1][2][2][2][8][9]
CBI mo. day year

☐ a. If a Chemical Abstracts Service Number (CAS No.) is provided in the Federal Register, list the CAS No. [0][2][6][4][7][1]-[6][2]-[5]

b. If a chemical substance CAS No. is not provided in the Federal Register, list either (i) the chemical name, (ii) the mixture name, or (iii) the trade name of the chemical substance as provided in the Federal Register.

(i) Chemical name as listed in the rule NA

(ii) Name of mixture as listed in the rule

(iii) Trade name as listed in the rule

c. If a chemical category is provided in the Federal Register, report the name of the category as listed in the rule, the chemical substance CAS No. you are reporting on which falls under the listed category, and the chemical name of the substance you are reporting on which falls under the listed category.

Name of category as listed in the rule NA

CAS No. of chemical substance [][][][][][]-[][]-[]

Name of chemical substance

1.02 Identify your reporting status under CAIR by circling the appropriate response(s).

CBI Manufacturer 1

☐ Importer 2

Processor 3

X/P manufacturer reporting for customer who is a processor 4

X/P processor reporting for customer who is a processor 5

☐ Mark (X) this box if you attach a continuation sheet.

1.03. Does the substance you are reporting on have an "x/p" designation associated with it in the above-listed Federal Register Notice?
CBI
☐ Yes ☒ Go to question 1.04
☐ No ☐ Go to question 1.05

1.04 a. Do you manufacture, import, or process the listed substance and distribute it under a trade name(s) different than that listed in the Federal Register Notice? Circle the appropriate response.
CBI
☐ Yes 1
☐ No 2

b. Check the appropriate box below:

☐ You have chosen to notify your customers of their reporting obligations
Provide the trade name(s)

☐ You have chosen to report for your customers

☐ You have submitted the trade name(s) to EPA one day after the effective date of the rule in the Federal Register Notice under which you are reporting.

1.05 If you buy a trade name product and are reporting because you were notified of your reporting requirements by your trade name supplier, provide that trade name.
CBI

☐ Trade name Wingfil Part A

Is the trade name product a mixture? Circle the appropriate response.

Yes 1
No 2

1.06 Certification -- The person who is responsible for the completion of this form must sign the certification statement below:

CBI
☐ "I hereby certify that, to the best of my knowledge and belief, all information entered on this form is complete and accurate."

BOB OLANS
NAME

B. Olans
SIGNATURE

7/3/89
DATE SIGNED

BRANCH MANAGER
TITLE

(406) 128 - 037
TELEPHONE NO.

☐ Mark (X) this box if you attach a continuation sheet.

- 1.07 Exemptions From Reporting -- If you have provided EPA or another Federal agency with the required information on a CAIR Reporting Form for the listed substance within the past 3 years, and this information is current, accurate, and complete for the time period specified in the rule, then sign the certification below. You are required to complete section 1 of this CAIR form and provide any information now required but not previously submitted. Provide a copy of any previous submissions along with your Section 1 submission.

"I hereby certify that, to the best of my knowledge and belief, all required information which I have not included in this CAIR Reporting Form has been submitted to EPA within the past 3 years and is current, accurate, and complete for the time period specified in the rule."

NA

NAME SIGNATURE DATE SIGNED

TITLE () TELEPHONE NO. DATE OF PREVIOUS SUBMISSION

- 1.08 CBI Certification -- If you have asserted any CBI claims in this report you must certify that the following statements truthfully and accurately apply to all of those confidentiality claims which you have asserted.

CBI
[] "My company has taken measures to protect the confidentiality of the information, and it will continue to take these measures; the information is not, and has not been, reasonably ascertainable by other persons (other than government bodies) by using legitimate means (other than discovery based on a showing of special need in a judicial or quasi-judicial proceeding) without my company's consent; the information is not publicly available elsewhere; and disclosure of the information would cause substantial harm to my company's competitive position."

NA

NAME SIGNATURE DATE SIGNED

TITLE () TELEPHONE NO.

[] Mark (X) this box if you attach a continuation sheet.

1.09 Facility Identification

() Address (3)(3)(0)(3) WEST BROADWAY Street

(M) I S S O U L A [] [] [] [] [] [] [] [] [] [] [] [] []
City

[M] [T] [5] [9] [8] [0] [1] -- [] [] [] []
State Zip

Dun & Bradstreet Number _____

EPA ID Number [] [] [] [] [] [] [] []

Employer ID Number (5) (6) (0) (7) (5) (6) (0) (6) 7

Primary Standard Industrial Classification (SIC) Code [7] [5] [3] [4]

Other SIC Code [] [] [] []

Other SIC Code [] [] [] []

1.10 Company Headquarters Identification

[] Address [4][4][0][4][G][][S][t][u][a][r][t][][A][n][d][r][e][w][][B][l][y][d][]
Street

(C)(h)(a)(r)(l)(o)(t)(t)(e) City

[N] [C] [2] [8] [2] [1] [0] -- [] [] [] []
 State Zip

Dun & Bradstreet Number [0] [5] - [1] [3] [3] - [0] [6] [6] [0]

Employer ID Number [5][6][0][7][5][6][0][6]7

☐ Mark (X) this box if you attach a continuation sheet.

1.14 Facility Acquired -- If you purchased this facility during the reporting year, provide the following information about the seller:

NA

CBI Name of Seller { } { } { } { } { } { } { } { } { } { } { } { } { } { } { } { } { }

() Mailing Address () () () () () () () () () () () () () () ()
Street

Street

City

City

[] [] [] [] [] [] [] -- [] [] [] []
State Zip

State

Zip

Employer ID Number () () () () () () () ()

Date of Sale () () () () () ()
Mo. Day Year

Mo.

Dav

Year

[illegible]

Telephone Number () () () - () () () - () () () ()

NA

1.15 Facility Sold -- If you sold this ^{NA} facility during the reporting year, provide the following information about the buyer:

[illegible]

() Mailing Address () () () () () () () () () () () () () () () ()
Street

Street

City

City

 --

State

Zip

State

Zip

Employer ID Number() () () () () () () ()

Date of Purchase () () () () () ()
Mo. Day Year

Mo.

Da v

Year

[illegible]

Telephone Number () () () - () () () - () () () ()

☐ Mark (X) this box if you attach a continuation sheet.

1.16 For each classification listed below, state the quantity of the listed substance that was manufactured, imported, or processed at your facility during the reporting year.

CBI

☐

Classification

Quantity (kg/yr)

Manufactured -0-

Imported -0-

Processed (include quantity repackaged) -0-

Of that quantity manufactured or imported, report that quantity:

In storage at the beginning of the reporting year

For on-site use or processing

For direct commercial distribution (including export)

In storage at the end of the reporting year

Of that quantity processed, report that quantity:

In storage at the beginning of the reporting year

Processed as a reactant (chemical producer)

Processed as a formulation component (mixture producer)

Processed as an article component (article producer)

Repackaged (including export)

In storage at the end of the reporting year

☐ Mark (X) this box if you attach a continuation sheet.

PART C. IDENTIFICATION OF MIXTURES

- 1.17 Mixture -- If the listed substance on which you are required to report is a mixture or a component of a mixture, provide the following information for each component chemical. (If the mixture composition is variable, report an average percentage of each component chemical for all formulations.)

CBI

[]

Component Name	Supplier Name	Average % Composition by Weight (specify precision, e.g., 45% ± 0.5%)
TDI Prepolymer	ARNCO	40 ± 5.0
Petroleum Hydrocarbon	ARNCO	55 ± 5.0
Toluene Diisocyanate	ARNCO	4.0 ± 0.5
Total		100%

[] Mark (X) this box if you attach a continuation sheet.

2.04 State the quantity of the listed substance that your facility manufactured, imported, or processed during the 3 corporate fiscal years preceding the reporting year in descending order.

CBI

<input type="checkbox"/>	Year ending	[1][2]	[8][7]	
		Mo.	Year	
	Quantity manufactured	-0-		kg
	Quantity imported	-0-		kg
	Quantity processed	130.4		kg
	Year ending	[1][2]	[8][6]	
		Mo.	Year	
	Quantity manufactured	-0-		kg
	Quantity imported	-0-		kg
	Quantity processed	-0-		kg
	Year ending	[1][2]	[8][5]	
		Mo.	Year	
	Quantity manufactured	NONE		kg
	Quantity imported	-0-		kg
	Quantity processed	-0-		kg

2.05 Specify the manner in which you manufactured the listed substance. Circle all appropriate process types.

CBI

<input type="checkbox"/>	NA	
<input type="checkbox"/>	Continuous process	1
	Semicontinuous process	2
	Batch process	3

☐ Mark (X) this box if you attach a continuation sheet.

2.06 Specify the manner in which you processed the listed substance. Circle all appropriate process types.

- ☐ Continuous process 1
- ☐ Semicontinuous process 2
- ☐ Batch process (3)

2.07 State your facility's name-plate capacity for manufacturing or processing the listed substance. (If you are a batch manufacturer or batch processor, do not answer this question.)

- ☐ NA
- ☐ Manufacturing capacity kg/yr
- ☐ Processing capacity kg/yr

2.08 If you intend to increase or decrease the quantity of the listed substance manufactured, imported, or processed at any time after your current corporate fiscal year, estimate the increase or decrease based upon the reporting year's production volume.

- ☐
- | | Manufacturing
Quantity (kg) | Importing
Quantity (kg) | Processing
Quantity (kg) |
|--------------------|--------------------------------|----------------------------|-----------------------------|
| Amount of increase | | | |
| Amount of decrease | | | |
- PRODUCT PROCESSED HAS BEEN DISCONTINUED
AT THIS LOCATION

☐ Mark (X) this box if you attach a continuation sheet.

2.09 For the three largest volume manufacturing or processing process types involving the listed substance, specify the number of days you manufactured or processed the listed substance during the reporting year. Also specify the average number of hours per day each process type was operated. (If only one or two operations are involved, list those.)

☐

Days/Year Average
Hours/Day

Process Type #1 (The process type involving the largest quantity of the listed substance.)

Manufactured

NONE

Processed

Process Type #2 (The process type involving the 2nd largest quantity of the listed substance.)

Manufactured

Processed

Process Type #3 (The process type involving the 3rd largest quantity of the listed substance.)

Manufactured

Processed

2.10 State the maximum daily inventory and average monthly inventory of the listed substance that was stored on-site during the reporting year in the form of a bulk chemical.

CBI

☐

Maximum daily inventory

kg

Average monthly inventory

kg

☐ Mark (X) this box if you attach a continuation sheet.

CBI

☐

NA

2.12 Related Product — List any byproducts, coproducts, or impurities present with the listed substance in concentrations greater than 0.1 percent as it is manufactured, imported, or processed. The source of byproducts, coproducts, or impurities means the source from which the byproducts, coproducts, or impurities are made or introduced into the product (e.g., carryover from raw material, reaction product, etc.).

<u>CAS No.</u>	<u>Chemical Name</u>	<u>Byproduct, Coproduct or Impurity¹</u>	<u>Concentration (%) (specify ± % precision)</u>	<u>Source of Byproducts, Coproducts, or Impurities</u>

¹Use the following codes to designate byproduct, coproduct, or impurity:

B = Byproduct
C = Coproduct
I = Impurity

☐ Mark (X) this box if you attach a continuation sheet.

2.10 Existing Product Types---List all existing product types which you manufactured, imported, or processed using the listed substance during the reporting year. List the quantity of listed substance you use for each product type as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a.	b.	c.	d.
Product Types ¹	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users ²
X	100	100	I, CM

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antivear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) <u>Article-Flat proof tire</u>

²Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

- 2.13 Expected Product Types -- Identify all product types which you expect to manufacture, import, or process using the listed substance at any time after your current corporate fiscal year. For each use, specify the quantity you expect to manufacture, import, or process for each use as a percentage of the total volume of listed substance used during the reporting year. Also list the quantity of listed substance used captively on-site as a percentage of the value listed under column b., and the types of end-users for each product type. (Refer to the instructions for further explanation and an example.)

CBI

☐

a.	b.	c.	d.
Product Types ¹	% of Quantity Manufactured, Imported, or Processed	% of Quantity Used Captively On-Site	Type of End-Users ²
X	100	100	I, CM

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/ Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/ Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) <u>Article-Flat proof tire</u>

²Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

2.14 Final Product -- Complete the following table for each type of final product manufactured, imported, or processed at your facility that contains the listed substance other than as an impurity.

☐

a.	b.	c.	d.
Product Type ¹	Final Product's Physical Form ²	Average % Composition of Listed Substance in Final Product	Type of End-Users ³
X	H	< 0.01	I, CM

¹Use the following codes to designate product types:

A = Solvent	L = Moldable/Castable/Rubber and additives
B = Synthetic reactant	M = Plasticizer
C = Catalyst/Initiator/Accelerator/Sensitizer	N = Dye/Pigment/Colorant/Ink and additives
D = Inhibitor/Stabilizer/Scavenger/Antioxidant	O = Photographic/Reprographic chemical and additives
E = Analytical reagent	P = Electrodeposition/Plating chemicals
F = Chelator/Coagulant/Sequestrant	Q = Fuel and fuel additives
G = Cleanser/Detergent/Degreaser	R = Explosive chemicals and additives
H = Lubricant/Friction modifier/Antiwear agent	S = Fragrance/Flavor chemicals
I = Surfactant/Emulsifier	T = Pollution control chemicals
J = Flame retardant	U = Functional fluids and additives
K = Coating/Binder/Adhesive and additives	V = Metal alloy and additives
	W = Rheological modifier
	X = Other (specify) <u>Article-Flat proof tire</u>

²Use the following codes to designate the final product's physical form:

A = Gas	F2 = Crystalline solid
B = Liquid	F3 = Granules
C = Aqueous solution	F4 = Other solid
D = Paste	G = Gel
E = Slurry	H = Other (specify) <u>Article</u>
F1 = Powder	

³Use the following codes to designate the type of end-users:

I = Industrial	CS = Consumer
CM = Commercial	H = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

2.15 Circle all applicable modes of transportation used to deliver bulk shipments of the
CBI listed substance to off-site customers.

- ☐ Truck 1
Railcar 2
Barge, Vessel 3
Pipeline 4
Plane 5
Other (specify) _____ 6

2.16 Customer Use -- Estimate the quantity of the listed substance used by your customers
CBI or prepared by your customers during the reporting year for use under each category
of end use listed (i-iv).

☐

Category of End Use

i. Industrial Products

Chemical or mixture kg/yr
Article NONE kg/yr

ii. Commercial Products

Chemical or mixture kg/yr
Article kg/yr

iii. Consumer Products

Chemical or mixture kg/yr
Article kg/yr

iv. Other

Distribution (excluding export) kg/yr
Export kg/yr
Quantity of substance consumed as reactant kg/yr
Unknown customer uses kg/yr

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 3 PROCESSOR RAW MATERIAL IDENTIFICATION

PART A GENERAL DATA

- 3.01 Specify the quantity purchased and the average price paid for the listed substance for each major source of supply listed. Product trades are treated as purchases. The average price is the market value of the product that was traded for the listed substance.

CBI

☐

Source of Supply

Quantity
(kg)

Average Price
(\$/kg)

The listed substance was manufactured on-site.

NONE

The listed substance was transferred from a different company site.

NONE

The listed substance was purchased directly from a manufacturer or importer.

NONE

The listed substance was purchased from a distributor or repackager.

NONE

The listed substance was purchased from a mixture producer.

NONE

- 3.02 Circle all applicable modes of transportation used to deliver the listed substance to your facility.

CBI

☐

- Truck 1
- Railcar 2
- Barge, Vessel 3
- Pipeline 4
- Plane 5
- Other (specify) 6

☐ Mark (X) this box if you attach a continuation sheet.

3.03 CBI a. Circle all applicable containers used to transport the listed substance to your facility.

☐

- Bags 1
- Boxes 2
- Free standing tank cylinders 3
- Tank rail cars 4
- Hopper cars 5
- Tank trucks 6
- Hopper trucks 7
- Drums 8
- Pipeline 9
- Other (specify) 10

b. If the listed substance is transported in pressurized tank cylinders, tank rail cars, or tank trucks, state the pressure of the tanks.

Tank cylinders mmHg

Tank rail cars mmHg

Tank trucks mmHg

☐ Mark (X) this box if you attach a continuation sheet.

PART B RAW MATERIAL IN THE FORM OF A MIXTURE

- 3.04 If you obtain the listed substance in the form of a mixture, list the trade name(s) of the mixture, the name of its supplier(s) or manufacturer(s), an estimate of the average percent composition by weight of the listed substance in the mixture, and the amount of mixture processed during the reporting year.

CBI

☐

<u>Trade Name</u>	<u>Supplier or Manufacturer</u>	<u>Average % Composition by Weight (specify \pm % precision)</u>	<u>Amount Processed (kg/yr)</u>
Wingfil Part A.	ARNCO	4.0 \pm 0.5	NONE

☐ Mark (X) this box if you attach a continuation sheet.

PART C RAW MATERIAL VOLUME

3.05 State the quantity of the listed substance used as a raw material during the reporting year in the form of a class I chemical, class II chemical, or polymer, and the percent composition, by weight, of the listed substance.

CBI
[]

	Quantity Used (kg/yr)	% Composition by Weight of Listed Sub- stance in Raw Material (specify \pm % precision)
Class I chemical	NONE	4.0 \pm 0.5
Class II chemical		
Polymer		

[] Mark (X) this box if you attach a continuation sheet.

SECTION 4 PHYSICAL/CHEMICAL PROPERTIES

General Instructions:

If you are reporting on a mixture as defined in the glossary, reply to questions in Section 4 that are inappropriate to mixtures by stating "NA -- mixture."

For questions 4.06-4.15, if you possess any hazard warning statement, label, MSDS, or other notice that addresses the information requested, you may submit a copy or reasonable facsimile in lieu of answering those questions which it addresses.

PART A PHYSICAL/CHEMICAL DATA SUMMARY

- 4.01 Specify the percent purity for the three major¹ technical grade(s) of the listed substance as it is manufactured, imported, or processed. Measure the purity of the substance in the final product form for manufacturing activities, at the time you import the substance, or at the point you begin to process the substance.

CBI

☐

	<u>Manufacture</u>	<u>Import</u>	<u>Process</u>
Technical grade #1	_____ % purity	_____ % purity	NA-mixture _____ % purity
Technical grade #2	_____ % purity	_____ % purity	_____ % purity
Technical grade #3	_____ % purity	_____ % purity	_____ % purity

¹Major = Greatest quantity of listed substance manufactured, imported or processed.

- 4.02 Submit your most recently updated Material Safety Data Sheet (MSDS) for the listed substance, and for every formulation containing the listed substance. If you possess an MSDS that you developed and an MSDS developed by a different source, submit your version. Indicate whether at least one MSDS has been submitted by circling the appropriate response.

Yes (1)

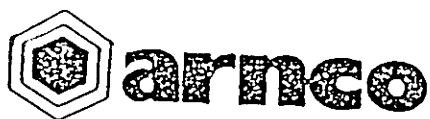
No 2

Indicate whether the MSDS was developed by your company or by a different source.

Your company 1

Another source (2)

☐ Mark (X) this box if you attach a continuation sheet.



MATERIAL SAFETY DATA SHEET

REVISION DATE June 4, 1986

I. GENERAL INFORMATION

PRODUCT NAME : WING-FIL COMPONENT "A"
CHEMICAL NAME : TDI Prepolymer plus Petroleum Hydrocarbon
CHEMICAL FAMILY : Isocyanate Prepolymer and Petroleum Hydrocarbon
FORMULA : Proprietary
DOT HAZARD CLASS : UN2078 (TDI)
MANUFACTURER : ARNCO, 5141 Firestone Place, South Gate, CA 90280-3570
Phone No: (213)567-1378
CHEMTREC Phone No: (800)424-9300 District of Columbia: (202)483-7616

II. INGREDIENTS

Components	TLV	Flash Point OF	Boiling Point OF	Vapor Press. mm Hg	Vapor Dens. (Air=1)	Flammable Limit LEL UEL
TDI Prepolymer	0.02ppm 0.2mg/m ³	Not Estab.	Not Estab.	0.02 @77°F.	6.0	Not Estab.
Petroleum Hydrocarbon	0.2mg/m ³ TWA-ACGIH	>300	>550	<1.0 @68°F.	<0.1	No Data Available

III. PHYSICAL DATA

BOILING POINT (°F) : 464
VAPOR PRESSURE (mm Hg) : SEE SECTION II
VAPOR DENSITY (Air=1) : SEE SECTION II
SOLUBILITY IN WATER, % : Insoluble. Reacts with water to liberate CO₂ gas.
APPEARANCE & ODOR : Dark brown liquid. Sharp pungent odor.
SPECIFIC GRAVITY (H₂O=1) : 1.01
% VOLATILE BY VOLUME : Negligible
EVAPORATION RATE (Ether=1) : Not Established

5141 FIRESTONE PLACE • P.O. BOX 1983 • SOUTH GATE, CALIFORNIA 90280 • (213) 567-1378 • (800) 762-7620
Twx 910-321-4156

IV. FIRE & EXPLOSION HAZARD DATA

FLASH POINT (°F) : 320
FLAMMABLE LIMITS : Not Established
EXTINGUISHING MEDIA : Dry chemical, chemical foam, carbon dioxide

SPECIAL FIRE FIGHTING PROCEDURES: Fire fighters should wear full emergency equipment with self-contained pressure-demand breathing apparatus. Use water to cool fire-exposed containers. Eliminate all sources of ignition.

UNUSUAL FIRE & EXPLOSION HAZARDS: During a fire, toxic gases are generated. Closed containers may explode from extreme heat or from water contamination. DO NOT reseal water-contaminated containers, as pressure buildup up may cause violent rupture of the container.

V. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: 0.02 ppm; 0.2 mg/m³

SYMPTOMS OF EXPOSURE:

INHALATION: May cause dizziness and nausea. Irritation of the upper and lower respiratory tract. Some individuals may develop isocyanate hypersensitization and must avoid further exposure to even low isocyanate levels. Inhalation of mists may present a cancer hazard. Sinusitis, bronchitis, asthma, and impaired ventilatory capacity can occur in some individuals.

INGESTION: Irritation and corrosive action in the mouth, stomach and digestive tract. Possibly liver toxicity. Aspiration into the lungs can cause chemical pneumonitis which can be fatal.

EYES: Liquid, vapors, or mist can cause severe irritation, redness, tearing, blurred vision and possibly irreversible damage to the eye.

SKIN: Irritation and allergic sensitivity may occur for some individuals, producing reddening, swelling or blistering, and skin sensitization, possibly resulting in dermatitis. This product contains petroleum oils similar to those categorized by the International Agency for Research on Cancer (IARC) as causing skin cancer in mice after prolonged and repeated contact. Any potential hazard can be minimized by using recommended protective equipment to avoid skin contact and by washing thoroughly after handling.

WATKINS

5141 FIRESTONE PLACE • SOUTH GATE, CALIFORNIA 90280 • (213) 567-1378 • (213) 567-0587 • TWX 910-321-4156

V. HEALTH HAZARD DATA (continued)

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Pre-existing unspecific bronchial hypersensitivity and, potentially, any allergies.

PRIMARY ROUTES OF ENTRY: Inhalation and skin contact.

EMERGENCY FIRST AID:

INHALATION: Remove victim to fresh air. If breathing is difficult, administer oxygen. If breathing has stopped, apply artificial respiration, and get medical attention immediately. NOTE TO PHYSICIAN: Treat symptomatically: bronchodilators; oxygen.

INGESTION: DO NOT INDUCE VOMITING. Aspiration can be fatal. Give a glass of milk or water, keep patient quiet and warm, and get prompt medical attention.

EYES: Flush immediately with water for at least 15 minutes, occasionally lifting the eyelid, and get prompt medical attention.

SKIN: Remove contaminated clothing and launder before reuse. Wash affected skin with soap and water. Consult a physician if swelling or reddening occurs.

VI. REACTIVITY DATA

STABILITY: Stable under normal, recommended storage conditions.

CONDITIONS TO AVOID: Open flame and storage temperatures above 120°F.

INCOMPATIBILITY: Materials to avoid are water, alcohols, ammonia, amines, and alkalis. Contaminated containers should be left vented and be moved to a safe area for neutralization and proper disposal.

HAZARDOUS POLYMERIZATION: May occur.

CONDITIONS TO AVOID: Exposure to high temperature, or resealing of containers contaminated with materials listed under INCOMPATIBILITY (materials to avoid).

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon monoxide and dioxide, nitrogen oxides, sulfur oxides, unidentified organic compounds, and traces of hydrogen cyanide (HCN).

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VII. ENVIRONMENTAL PROTECTION PROCEDURES

SPILL RESPONSE: Evacuate and ventilate the area. Eliminate all sources of ignition. Respiratory protection must be worn during cleanup. Cover the spill with sawdust, vermiculite, or other absorbent material. Scoop and place in open container and remove to well ventilated area to be treated with a decontamination solution made up of 20% Tergitol TMN-10 (Union Carbide) and 80% water; or 5% concentrated ammonia, 2% detergent, and 93% water. Leave the container open for 24-48 hours. Wash down the spill area with decontamination solution. For major spills call CHEMTREC: (800) 424-9300.

WASTE DISPOSAL METHOD Decontaminated waste must be disposed of in accordance with Federal, State, and local environmental control regulations. It is your duty to comply with the Clean Air Act, Clean Water Act, and Resources Conservation and Recovery Act.

VIII. SPECIAL PROTECTION INFORMATION

EYE PROTECTION: Chemical workers goggles or full-face shield. Contact lenses should not be worn in or near work area.

RESPIRATORY PROTECTION: MSHA/NIOSH approved positive-pressure air-supplied respirator with full-face shield. Organic vapor filters are not effective against TDI vapor. The vapor pressure of TDI is such that at normal temperatures, vapor concentration in the air will exceed the TLV of 0.02 ppm.

SKIN PROTECTION: Impervious, chemical resistant (natural rubber) gloves, arm covers, aprons or coveralls, boots and caps.

VENTILATION RECOMMENDED: General mechanical ventilation and local exhaust, to maintain vapor concentration below the TLV.

OTHER PROTECTION: Safety showers and eye wash stations must be easily accessible. Provide a dry nitrogen blanket in bulk storage tanks.

IX. SPECIAL PRECAUTIONS

HYGIENIC PRACTICES IN HANDLING & STORAGE: Store below 100°F, preferably below 90°F, in tightly-closed containers to prevent atmospheric moisture contamination. DO NOT reseal if contamination is suspected. DO NOT store near open flame or high heat.

Wear protective equipment to prevent eye and skin contact. DO NOT breathe vapors. Wash hands before eating or smoking.

Since emptied containers retain product residues (vapor or liquid), all hazard precautions given in this MSDS must be observed. For proper container disposal, fill with water and allow to stand unsealed for at least 48 hours then dispose of in accordance with Federal, State and local environmental control regulations.

THE INFORMATION IN THIS MSDS IS FURNISHED WITHOUT WARRANTY, EXPRESSED OR IMPLIED, EXCEPT THAT IT IS ACCURATE TO THE BEST KNOWLEDGE OF ARNCO. THE DATA ON THIS MSDS RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED HEREIN. ARNCO ASSUMES NO LEGAL RESPONSIBILITY FOR USE OR RELIANCE UPON THIS DATA.

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4.03 Submit a copy or reasonable facsimile of any hazard information (other than an MSDS) that is provided to your customers/users regarding the listed substance or any formulation containing the listed substance. Indicate whether this information has been submitted by circling the appropriate response.

Yes 1
 No (2)

4.04 For each activity that uses the listed substance, circle all the applicable number(s) corresponding to each physical state of the listed substance during the activity listed. Physical states for importing and processing activities are determined at the time you import or begin to process the listed substance. Physical states for manufacturing, storage, disposal and transport activities are determined using the final state of the product.

CBI

[]

Activity	Physical State				
	Solid	Slurry	Liquid	Liquified Gas	Gas
Manufacture	1	2	3	4	5
Import	1	2	3	4	5
Process	1	2	(3)	4	5
Store	(1)	2	3	4	5
Dispose	(1)	2	3	4	5
Transport	(1)	2	3	4	5

[] Mark (X) this box if you attach a continuation sheet.

4.05 Particle Size -- If the listed substance exists in particulate form during any of the following activities, indicate for each applicable physical state the size and the percentage distribution of the listed substance by activity. Do not include particles ≥ 10 microns in diameter. Measure the physical state and particle sizes for importing and processing activities at the time you import or begin to process the listed substance. Measure the physical state and particle sizes for manufacturing storage, disposal and transport activities using the final state of the product.

CBI
[]

Physical State		Manufacture	Import	Process	Store	Dispose	Transport
Dust	<1 micron			NA			
	1 to <5 microns			NA			
	5 to <10 microns			NA			
Powder	<1 micron			NA			
	1 to <5 microns			NA			
	5 to <10 microns			NA			
Fiber	<1 micron			NA			
	1 to <5 microns			NA			
	5 to <10 microns			NA			
Aerosol	<1 micron			NA			
	1 to <5 microns			NA			
	5 to <10 microns			NA			

[] Mark (X) this box if you attach a continuation sheet.

SECTION 5. ENVIRONMENTAL FATE

PART A RATE CONSTANTS AND TRANSFORMATION PRODUCTS NA-Mixture

5.01 Indicate the rate constants for the following transformation processes.

a. Photolysis:

Absorption spectrum coefficient (peak) (1/M cm) at _____ nm
Reaction quantum yield, ϕ at _____ nm
Direct photolysis rate constant, k_p , at ... 1/hr _____ latitude

b. Oxidation constants at 25°C:

For 1O_2 (singlet oxygen), k_{ox} 1/M hr
For RO_2 (peroxy radical), k_{ox} 1/M hr

c. Five-day biochemical oxygen demand, BOD_5 ... mg/l

d. Biotransformation rate constant:

For bacterial transformation in water, k_b ... 1/hr
Specify culture

e. Hydrolysis rate constants:

For base-promoted process, k_B 1/M hr
For acid-promoted process, k_A 1/M hr
For neutral process, k_N 1/hr

f. Chemical reduction rate (specify conditions) _____

g. Other (such as spontaneous degradation) ... _____

☐ Mark (X) this box if you attach a continuation sheet.

PART B PARTITION COEFFICIENTS

5.02 a. Specify the half-life of the listed substance in the following media.

<u>Media</u>	NA-Mixture <u>Half-life (specify units)</u>
Groundwater	_____
Atmosphere	_____
Surface water	_____
Soil	_____

b. Identify the listed substance's known transformation products that have a half-life greater than 24 hours.

<u>CAS No.</u>	<u>Name</u>	<u>Half-life (specify units)</u>	<u>Media</u>
_____	_____	_____	in _____
_____	_____	_____	in _____
_____	_____	_____	in _____
_____	_____	_____	in _____

5.03 Specify the octanol-water partition coefficient, K_{ow} ... NA-Mixture _____ at 25°C
 Method of calculation or determination _____

5.04 Specify the soil-water partition coefficient, K_d NA-Mixture _____ at 25°C
 Soil type _____

5.05 Specify the organic carbon-water partition coefficient, K_{oc} NA-Mixture _____ at 25°C

5.06 Specify the Henry's Law Constant, H NA-Mixture _____ atm-m³/mole

☐ Mark (X) this box if you attach a continuation sheet.

5.07 List the bioconcentration factor (BCF) of the listed substance, the species for which it was determined, and the type of test used in deriving the BCF.

Bioconcentration Factor

Species ^{NA-Mixture}

Test¹

_____	_____	_____
_____	_____	_____
_____	_____	_____

¹Use the following codes to designate the type of test:

F = Flowthrough

S = Static :

☐ Mark (X) this box if you attach a continuation sheet.

6.04 For each market listed below, state the quantity sold and the total sales value of the listed substance sold or transferred in bulk during the reporting year.

☐

Market

Quantity Sold or Transferred (kg/yr)

Total Sales Value (\$/yr)

Retail sales

Distribution -- Wholesalers

Distribution -- Retailers

Intra-company transfer

Repackagers

Mixture producers

Article producers

Other chemical manufacturers or processors

Exporters

Other (specify)

6.05 Substitutes -- List all known commercially feasible substitutes that you know exist for the listed substance and state the cost of each substitute. A commercially feasible substitute is one which is economically and technologically feasible to use in your current operation, and which results in a final product with comparable performance in its end uses.

CBI

☐

Substitute

Cost (\$/kg)

No substitutes currently known

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 7 MANUFACTURING AND PROCESSING INFORMATION

General Instructions

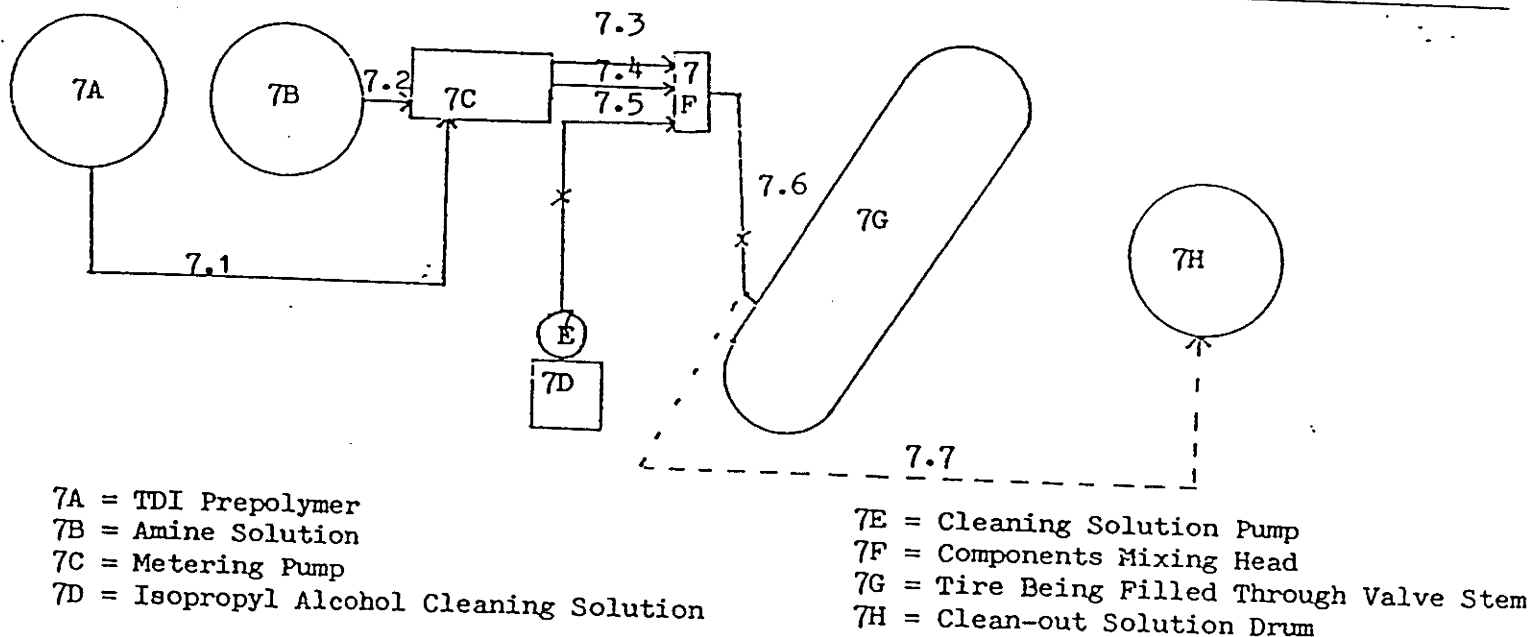
For questions 7.04-7.06, provide a separate response for each process block flow diagram provided in questions 7.01, 7.02, and 7.03. Identify the process type from which the information is extracted.

PART A MANUFACTURING AND PROCESSING PROCESS TYPE DESCRIPTION

7.01 In accordance with the instructions, provide a process block flow diagram showing the major (greatest volume) process type involving the listed substance.

CBI

☐ Process type Batch - Polyurethane Polymerization

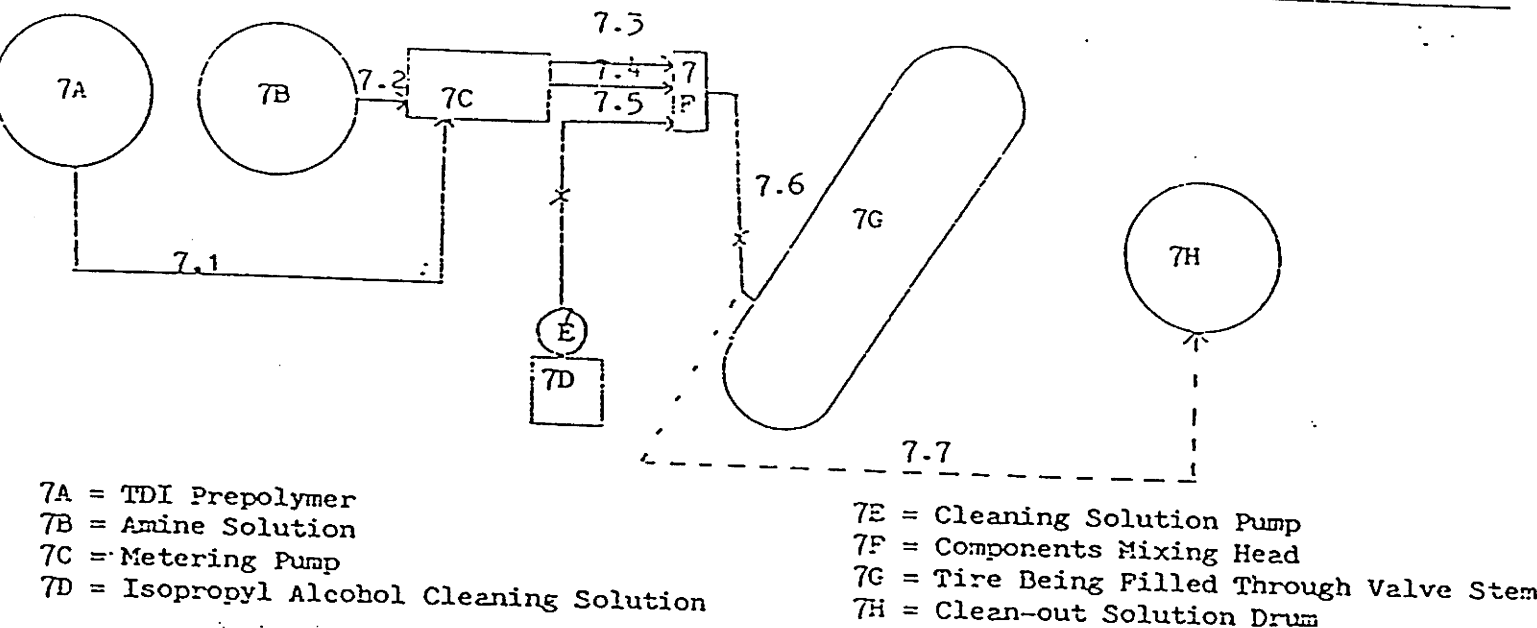


☐ Mark (X) this box if you attach a continuation sheet.

7.03 In accordance with the instructions, provide a process block flow diagram showing all process emission streams and emission points that contain the listed substance and which, if combined, would total at least 90 percent of all such emissions and not from one process type, provide a process block flow diagram showing all such emissions for each process type. If all such emissions are released from more than one process type, provide a process block flow diagram showing each process type as a separate block.

CBI

☐ Process type Batch - Polyurethane Polymerization



☐ Mark (X) this box if you attach a continuation sheet.

7.04 Describe the typical equipment types for each unit operation identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CBI

☐ Process type Batch- Polyurethane Polymerization

Unit Operation ID Number	Typical Equipment Type	Operating Temperature Range (°C)	Operating Pressure Range (mm Hg)	Vessel Composition
7A	Drum	Ambient	Atmospheric	Steel
7B	Drum	Ambient	Atmospheric	Steel
7C	Metering Pump	Ambient	Atmospheric	Stainless Steel
7D	5 Gallon Can	Ambient	Atmospheric	Steel
7E	Pump	Ambient	Atmospheric	Steel
7F	Mixing Head	Ambient	Atmospheric	Stainless Steel
7G	Tire	Ambient	Atmospheric	Vul. Rubber
7H	Drum	Ambient	Atmospheric	Steel

☐ Mark (X) this box if you attach a continuation sheet.

7.05 Describe each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type.

CET

N/A- EQUIPMENT TRANSFERRED

☐ Process type Batch - Polyurethane Polymerization

Process Stream ID Code	Process Stream Description	Physical State ¹	Stream Flow (kg/yr)
7.1	TDI Prepolymer	OL	
7.3	TDI Prepolymer	OL	
7.6	Polymerizing Polyurethane	OL	

¹Use the following codes to designate the physical state for each process stream:

- GC = Gas (condensable at ambient temperature and pressure)
- GU = Gas (uncondensable at ambient temperature and pressure)
- SO = Solid
- SY = Sludge or slurry
- AL = Aqueous liquid
- OL = Organic liquid
- IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

☐ Mark (X) this box if you attach a continuation sheet.

7.06 Characterize each process stream identified in your process block flow diagram(s). If a process block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the CBI instructions for further explanation and an example.)

☐ Process type Batch - Polyurethane Polymerization

a. Process Stream ID Code	b. Known Compounds ¹	c. Concen- trations ^{2,3} (% or ppm)	d. Other Expected Compounds	e. Estimated Concentrations (% or ppm)
7.1	TDI Prepolymer	40 ⁺ 5.0 (E) (W)	NA	NA
	Petroleum Hydrocarbon	55 ⁺ 5.0 (E) (W)	NA	NA
	Toluene Diisocyanate	4.0 ⁺ 0.5 (E) (W)	NA	NA
7.3	TDI Prepolymer	40 ⁺ 5.0 (E) (W)	NA	NA
	Petroleum Hydrocarbon	55 ⁺ 5.0 (E) (W)	NA	NA
	Toluene Diisocyanate	4.0 ⁺ 0.5 (E) (W)	NA	NA
7.6	Polyurethane	98 ⁺ 99 (E) (W)	NA	NA
	Toluene Diisocyanate	0.5 ⁺ 1 (E) (W)	NA	NA
	Amine	0.5 ⁺ 1 (E) (W)	NA	NA

7.06 continued below

☐ Mark (X) this box if you attach a continuation sheet.

¹For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column b. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
1		
2		
3		
4		
5		

²Use the following codes to designate how the concentration was determined:

A = Analytical result

E = Engineering judgement/calculation

³Use the following codes to designate how the concentration was measured:

V = Volume

W = Weight

☐ Mark (X) this box if you attach a continuation sheet.

PART A RESIDUAL TREATMENT PROCESS DESCRIPTION

7.01 In accordance with the instructions, provide a residual treatment block flow diagram which describes the treatment process used for residuals identified in question 7.01.

CBI

☐ Process type Batch - Polyurethane Polymerization

NA

☐ Mark (X) this box if you attach a continuation sheet.

PART B RESIDUAL GENERATION AND CHARACTERIZATION

8.05 Characterize each process stream identified in your residual treatment block flow diagram(s). If a residual treatment block flow diagram is provided for more than one process type, photocopy this question and complete it separately for each process type. (Refer to the instructions for further explanation and an example.)

CBI

[] Process type Batch - Polyurethane Polymerization

[illegible]

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

¹Use the following codes to designate the type of hazardous waste:

I = Ignitable
C = Corrosive
R = Reactive
E = EP toxic
T = Toxic
H = Acutely hazardous

²Use the following codes to designate the physical state of the residual:

GC = Gas (condensable at ambient temperature and pressure)
GU = Gas (uncondensable at ambient temperature and pressure)
SO = Solid
SY = Sludge or slurry
AL = Aqueous liquid
OL = Organic liquid
IL = Immiscible liquid (specify phases, e.g., 90% water, 10% toluene)

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

NA

³For each additive package introduced into a process stream, specify the compounds that are present in each additive package, and the concentration of each component. Assign an additive package number to each additive package and list this number in column d. (Refer to the instructions for further explanation and an example. Refer to the glossary for the definition of additive package.)

Additive Package Number	Components of Additive Package	Concentrations (% or ppm)
<u>1</u>		
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		

⁴Use the following codes to designate how the concentration was determined:

A = Analytical result

E = Engineering judgement/calculation

8.05 continued below

☐ Mark (X) this box if you attach a continuation sheet.

8.05 (continued)

NA

⁵Use the following codes to designate how the concentration was measured:

V = Volume

W = Weight

⁶Specify the analytical test methods used and their detection limits in the table below. Assign a code to each test method used and list those codes in column e.

<u>Code</u>	<u>Method</u>	<u>Detection Limit</u> <u>(± ug/l)</u>
<u>1</u>		
<u>2</u>		
<u>3</u>		
<u>4</u>		
<u>5</u>		
<u>6</u>		

☐ Mark (X) this box if you attach a continuation sheet.

CBI

[illegible]

² Use the codes provided in Exhibit 8-2 to designate the management methods

58

EXHIBIT 8-1.
(Refers to question 8.06(b))

WASTE DESCRIPTION CODES

These waste description codes were developed specifically for this survey to supplement the descriptions listed with the RCRA and other waste codes. (These waste description codes are not regulatory definitions.)

WASTE DESCRIPTION CODES FOR HAZARDOUS WASTE DESCRIBED BY A SINGLE RCRA F, K, P, OR U WASTE CODE

A01 Spent solvent (F001-F005, K086)	A06 Contaminated soil or cleanup residue	A10 Incinerator ash
A02 Other organic liquid (F001-F005, K086)	A07 Other F or K waste, exactly as described*	A11 Solidified treatment residue
A03 Still bottom (F001-F005, K086)	A08 Concentrated off-spec or discarded product	A12 Other treatment residue (specify in "Facility Notes")
A04 Other organic sludge (F001-F005, K086)	A09 Empty containers	A13 Other untreated waste (specify in "Facility Notes")
A05 Wastewater or aqueous mixture		

*"Exactly as described" means that the waste matches the description of the RCRA waste code.

INORGANIC LIQUIDS —Waste that is primarily inorganic and highly fluid (e.g., aqueous), with low suspended inorganic solids and low organic content.		
B01 Aqueous waste with low solvents	B32 Drilling mud	B61 Halogenated/nonhalogenated solvent mixture
B02 Aqueous waste with low other toxic organics	B33 Asbestos slurry or sludge	B62 Oil-water emulsion or mixture
B03 Spent acid with metals	B34 Chloride or other brine sludge	B63 Waste oil
B04 Spent acid without metals	B35 Other inorganic sludge (specify in "Facility Notes")	B64 Concentrated aqueous solution of other organics
B05 Acidic aqueous waste		B65 Concentrated phenolics
B06 Caustic solution with metals but no cyanides	INORGANIC SOLIDS —Waste that is primarily inorganic and solid, with low organic content and low-to-moderate water content; not pumpable.	B66 Organic paint, ink, lacquer, or varnish
B07 Caustic solution with metals and cyanides	B36 Soil contaminated with organics	B67 Adhesives or epoxies
B08 Caustic solution with cyanides but no metals	B37 Soil contaminated with inorganics only	B68 Paint thinner or petroleum distillates
B09 Spent caustic	B38 Ash, slag, or other residue from incineration of wastes	B69 Reactive or polymerizable organic liquid
B10 Caustic aqueous waste	B39 Other "dry" ash, slag, or thermal residue	B70 Other organic liquid (specify in "Facility Notes")
B11 Aqueous waste with reactive sulfides	B40 "Dry" lime or metal hydroxide solids chemically "fixed"	ORGANIC SLUDGES —Waste that is primarily organic, with low-to-moderate inorganic solids content and water content; pumpable.
B12 Aqueous waste with other reactives (e.g., explosives)	B41 "Dry" lime or metal hydroxide solids not "fixed"	B71 Still bottoms of halogenated (e.g., chlorinated) solvents or other organic liquids
B13 Other aqueous waste with high dissolved solids	B42 Metal scale, filings, or scrap	B72 Still bottoms of nonhalogenated solvents or other organic liquids
B14 Other aqueous waste with low dissolved solids	B43 Empty or crushed metal drums or containers	B73 Oily sludge
B15 Scrubber water	B44 Batteries or battery parts, casings, cores	B74 Organic paint or ink sludge
B16 Leachate	B45 Spent solid filters or adsorbents	B75 Reactive or polymerizable organics
B17 Waste liquid mercury	B46 Asbestos solids and debris	B76 Resins, tars, or tarry sludge
B18 Other inorganic liquid (specify in "Facility Notes")	B47 Metal-cyanide salts/chemicals	B77 Biological treatment sludge
	B48 Reactive cyanide salts/chemicals	B78 Sewage or other untreated biological sludge
	B49 Reactive sulfide salts/chemicals	B79 Other organic sludge (specify in "Facility Notes")
	B50 Other reactive salts/chemicals	ORGANIC SOLIDS —Waste that is primarily organic and solid, with low-to-moderate inorganic content and water content; not pumpable.
	B51 Other metal salts/chemicals	B80 Halogenated pesticide solid
	B52 Other waste inorganic chemicals	B81 Nonhalogenated pesticide solid
	B53 Lab packs of old chemicals only	B82 Solid resins or polymerized organics
	B54 Lab packs of debris only	B83 Spent carbon
	B55 Mixed lab packs	B84 Reactive organic solid
	B56 Other inorganic solids (specify in "Facility Notes")	B85 Empty fiber or plastic containers
		B86 Lab packs of old chemicals only
	INORGANIC GASES —Waste that is primarily inorganic with a low organic content and is a gas at atmospheric pressure.	B87 Lab packs of debris only
	B57 Inorganic gases	B88 Mixed lab packs
		B89 Other halogenated organic solid
	ORGANIC LIQUIDS —Waste that is primarily organic and is highly fluid, with low inorganic solids content and low-to-moderate water content.	B90 Other nonhalogenated organic solid
	B58 Concentrated solvent-water solution	ORGANIC GASES —Waste that is primarily organic with low-to-moderate inorganic content and is a gas at atmospheric pressure.
	B59 Halogenated (e.g., chlorinated) solvent	B91 Organic gases
	B60 Nonhalogenated solvent	

EXHIBIT 8-2.
(Refers to question 8.06(c))

MANAGEMENT METHODS

- M1 = Discharge to publicly owned
wastewater treatment works
M2 = Discharge to surface water under
NPDES
M3 = Discharge to off-site, privately
owned wastewater treatment works
M4 = Scrubber: a) caustic; b) water;
c) other
M5 = Vent to: a) atmosphere; b) flare;
c) other (specify) _____
M6 = Other (specify) _____

TREATMENT AND RECYCLING

Incineration/thermal treatment

- 1I Liquid injection
2I Rotary or rocking kiln
3I Rotary kiln with a liquid injection
unit
4I Two stage
5I Fixed hearth
6I Multiple hearth
7I Fluidized bed
8I Infrared
9I Fume/vapor
10I Pyrolytic destructor
11I Other incineration/thermal
treatment

Reuse as fuel

- 1RF Cement kiln
2RF Aggregate kiln
3RF Asphalt kiln
4RF Other kiln
5RF Blast furnace
6RF Sulfur recovery furnace
7RF Smelting, melting, or refining
furnace
8RF Coke oven
9RF Other industrial furnace
10RF Industrial boiler
11RF Utility boiler
12RF Process heater
13RF Other reuse as fuel unit

Fuel Blending

- 1FB Fuel blending

Solidification

- 1S Cement or cement/silicate processes
2S Pozzolanic processes
3S Asphaltic processes
4S Thermoplastic techniques
5S Organic polymer techniques
6S Jacketing (macro-encapsulation)
7S Other solidification

Recovery of solvents and liquid organics
for reuse

- 1SR Fractionation
2SR Batch still distillation
3SR Solvent extraction
4SR Thin-film evaporation
5SR Filtration
6SR Phase separation
7SR Dessication
8SR Other solvent recovery

Recovery of metals

- 1MR Activated carbon (for metals
recovery)
2MR Electrodialysis (for metals
recovery)
3MR Electrolytic metal recovery
4MR Ion exchange (for metals recovery)
5MR Reverse osmosis (for metals
recovery)
6MR Solvent extraction (for metals
recovery)
7MR Ultrafiltration (for metals
recovery)
8MR Other metals recovery

Wastewater Treatment

After each wastewater treatment type
listed below (1VT - 66WT) specify
a) tank; or b) surface impoundment
(i.e., 63WTA)

Equalization

- 1VT Equalization

Cyanide oxidation

- 2VT Alkaline chlorination
3VT Ozone
4VT Electrochemical
5VT Other cyanide oxidation

General oxidation (including
disinfection)

- 6VT Chlorination
7VT Ozonation
8VT UV radiation
9VT Other general oxidation

Chemical precipitation¹

- 10VT Lime
11VT Sodium hydroxide
12VT Soda ash
13VT Sulfide
14VT Other chemical precipitation

Chromium reduction

- 15VT Sodium bisulfite
16VT Sulfur dioxide

EXHIBIT 8-2. (continued)

MANAGEMENT METHODS

17WT Ferrous sulfate
18WT Other chromium reduction

Complexed metals treatment (other than
chemical precipitation by pH adjustment)
19WT Complexed metals treatment

Emulsion breaking
20WT Thermal
21WT Chemical
22WT Other emulsion breaking

Adsorption
23WT Carbon adsorption
24WT Ion exchange
25WT Resin adsorption
26WT Other adsorption

Stripping
27WT Air stripping
28WT Steam stripping
29WT Other stripping

Evaporation
30WT Thermal
31WT Solar
32WT Vapor recompression
33WT Other evaporation

Filtration
34WT Diatomaceous earth
35WT Sand
36WT Multimedia
37WT Other filtration

Sludge dewatering
38WT Gravity thickening
39WT Vacuum filtration
40WT Pressure filtration (belt, plate
and frame, or leaf)
41WT Centrifuge
42WT Other sludge dewatering

Air flotation
43WT Dissolved air flotation
44WT Partial aeration
45WT Air dispersion
46WT Other air flotation

Oil skimming
47WT Gravity separation

48WT Coalescing plate separation
49WT Other oil skimming

Other liquid phase separation
50WT Decanting
51WT Other liquid phase separation

Biological treatment
52WT Activated sludge
53WT Fixed film-trickling filter
54WT Fixed film-rotating contactor
55WT Lagoon or basin, aerated
56WT Lagoon, facultative
57WT Anaerobic
58WT Other biological treatment

Other wastewater treatment
59WT Wet air oxidation
60WT Neutralization
61WT Nitrification
62WT Denitrification
63WT Flocculation and/or coagulation
64WT Settling (clarification)
65WT Reverse osmosis
66WT Other wastewater treatment

OTHER WASTE TREATMENT

1TR Other treatment
2TR Other recovery for reuse

ACCUMULATION

1A Containers
2A Tanks

STORAGE

1ST Container (i.e., barrel, drum)
2ST Tank
3ST Waste pile
4ST Surface impoundment
5ST Other storage

DISPOSAL

1D Landfill
2D Land treatment
3D Surface impoundment (to be closed
as a landfill)
4D Underground injection well

¹Chemical precipitation is a treatment operation whereby the pH of a waste is adjusted to the range necessary for removal (precipitation) of contaminants. However, if the pH is adjusted solely to achieve a neutral pH, THE OPERATION SHOULD BE CONSIDERED NEUTRALIZATION (60WT).

8.22 Describe the combustion chamber design parameters for each of the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI

☐

Incinerator	Combustion Chamber Temperature (°C)		Location of Temperature Monitor		Residence Time In Combustion Chamber (seconds)	
	Primary	Secondary	Primary	Secondary	Primary	Secondary
1						
2						
3						

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1
No 2

8.23 Complete the following table for the three largest (by capacity) incinerators that are used on-site to burn the residuals identified in your process block or residual treatment block flow diagram(s).

CBI

☐

NA

Incinerator	Air Pollution Control Device ¹	Types of Emissions Data Available
1		
2		
3		

Indicate if Office of Solid Waste survey has been submitted in lieu of response by circling the appropriate response.

Yes 1
No 2

¹Use the following codes to designate the air pollution control device:

S = Scrubber (include type of scrubber in parenthesis)
E = Electrostatic precipitator
O = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

9.02 In accordance with the instructions, complete the following table for each activity in which you engage.

CBI

☐

N/A- EQUIPMENT TRANSFERRED TO DIFFERENT LOCATION

Activity	Process Category	Yearly Quantity (kg)	Total Workers	Total Worker-Hours
Manufacture of the listed substance	Enclosed			
	Controlled Release			
	Open			
On-site use as reactant	Enclosed			
	Controlled Release			
	Open			
On-site use as nonreactant	Enclosed			
	Controlled Release			
	Open			
On-site preparation of products	Enclosed			
	Controlled Release			
	Open			

☐ Mark (X) this box if you attach a continuation sheet.

9.03 Provide a descriptive job title for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance.

CBI

☐

Labor Category

Descriptive Job Title

A

NONE. EQUIPMENT TRANSFERRED TO
DIFFERENT LOCATION.

B

C

D

E

F

G

H

I

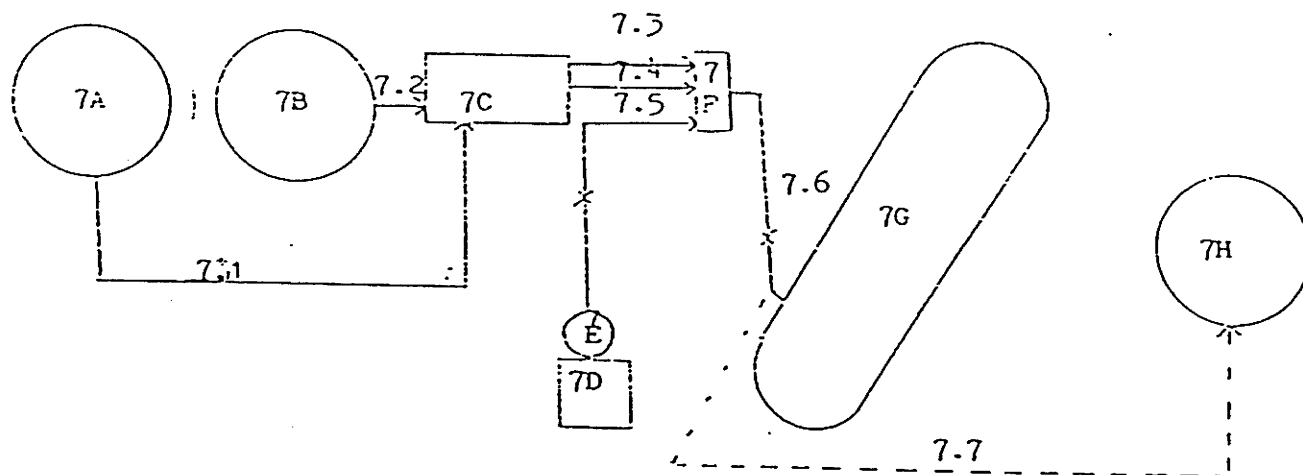
J

☐ Mark (X) this box if you attach a continuation sheet.

9.04 In accordance with the instructions, provide your process block flow diagram(s) and indicate associated work areas.

CBI

☐ Process type Batch - Polyurethane Polymerization



7A = TDI Prepolymer

7B = Amine Solution

7C = Metering Pump

7D = Isopropyl Alcohol Cleaning Solution

7E = Cleaning Solution Pump

7F = Components Mixing Head

7G = Tire Being Filled Through Valve Stem

7H = Clean-out Solution Drum

Note: All above is considered one work area

☐ Mark (X) this box if you attach a continuation sheet.

- 9.05. Describe the various work area(s) shown in question 9.04 that encompass workers who may potentially come in contact with or be exposed to the listed substance. Add any additional areas not shown in the process block flow diagram in question 7.01 or 7.02. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type Batch - Polyurethane Polymerization

Work Area ID

Description of Work Areas and Worker Activities

1

Pumping TDI/Amine solutions to mixer, filling tires through valve stem with polyurethane, and cleaning hosing with alcohol

2

3

4

5

6

7

8

9

10

☐ Mark (X) this box if you attach a continuation sheet.

9.06 Complete the following table for each work area identified in question 9.05, and for each labor category at your facility that encompasses workers who may potentially come in contact with or be exposed to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Batch - Polyurethane Polymerization

Work area

Labor Category	Number of Workers Exposed	Mode of Exposure (e.g., direct skin contact)	Physical State of Listed Substance ¹	Average Length of Exposure Per Day ²	Number of Days per Year Exposed
	NONE				

¹ Use the following codes to designate the physical state of the listed substance at the point of exposure:

GC = Gas (condensable at ambient temperature and pressure)

GU = Gas (uncondensable at ambient temperature and pressure; includes fumes, vapors, etc.)

SO = Solid

SY = Sludge or slurry

AL = Aqueous liquid

OL = Organic liquid

IL = Immiscible liquid

(specify phases, e.g., 90% water, 10% toluene)

² Use the following codes to designate average length of exposure per day:

A = 15 minutes or less

B = Greater than 15 minutes, but not exceeding 1 hour

C = Greater than one hour, but not exceeding 2 hours

D = Greater than 2 hours, but not exceeding 4 hours

E = Greater than 4 hours, but not exceeding 8 hours

F = Greater than 8 hours

☐ Mark (X) this box if you attach a continuation sheet.

CBI

Work area 1

[illegible]

☐ Mark (X) this box if you attach a continuation sheet.

PART B WORK PLACE MONITORING PROGRAM

9.08 If you monitor worker exposure to the listed substance, complete the following table.

321

☐

No monitor worker exposure available

<u>Sample/Test</u>	<u>Work Area ID</u>	<u>Testing Frequency (per year)</u>	<u>Number of Samples (per test)</u>	<u>Who Samples¹</u>	<u>Analyzed In-House (Y/N)</u>	<u>Number of Years Records Maintained</u>
Personal breathing zone						
General work area (air)						
Wipe samples						
Adhesive patches						
Blood samples						
Urine samples						
Respiratory samples						
Allergy tests						
Other (specify)						
Other (specify)						
Other (specify)						

¹Use the following codes to designate who takes the monitoring samples:

A = Plant industrial hygienist

B = Insurance carrier

C = OSHA consultant

D = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

9.09 For each sample type identified in question 9.08, describe the type of sampling and analytical methodology used for each type of sample:

<input type="checkbox"/>	Sample Type	Sampling and Analytical Methodology
	NA	

9.10 If you conduct personal and/or ambient air monitoring for the listed substance, specify the following information for each equipment type used.

CBI		Do not conduct			
<input type="checkbox"/>	Equipment Type ¹	Detection Limit ²	Manufacturer	Averaging Time (hr)	Model Number

¹Use the following codes to designate personal air monitoring equipment types:

- A = Passive dosimeter
- B = Detector tube
- C = Charcoal filtration tube with pump
- D = Other (specify) _____

Use the following codes to designate ambient air monitoring equipment types:

- E = Stationary monitors located within work area
- F = Stationary monitors located within facility
- G = Stationary monitors located at plant boundary
- H = Mobile monitoring equipment (specify) _____
- I = Other (specify) _____

²Use the following codes to designate detection limit units:

- A = ppm
- B = Fibers/cubic centimeter (f/cc)
- C = Micrograms/cubic meter ($\mu\text{g}/\text{m}^3$)

☐ Mark (X) this box if you attach a continuation sheet.

9.11 If you conduct routine medical tests for monitoring the health effects of exposure to the listed substance, specify the type and frequency of the tests.

CBI

☐

No tests conducted

Test Description

Frequency

(weekly, monthly, yearly, etc.)

☐ Mark (X) this box if you attach a continuation sheet.

PART C ENGINEERING CONTROLS

9.12 Describe the engineering controls that you use to reduce or eliminate worker exposure to the listed substance. Photocopy this question and complete it separately for each process type and work area.

CBI

None *

☐ Process type Batch - Polyurethane Polymerization

Work area 1

<u>Engineering Controls</u>	<u>Used (Y/N)</u>	<u>Year Installed</u>	<u>Upgraded (Y/N)</u>	<u>Year Upgraded</u>
Ventilation:				
Local exhaust	_____	_____	_____	_____
General dilution	_____	_____	_____	_____
Other (specify)	_____	_____	_____	_____
_____	_____	_____	_____	_____
Vessel emission controls	_____	_____	_____	_____
Mechanical loading or packaging equipment	_____	_____	_____	_____
Other (specify)	_____	_____	_____	_____
_____	_____	_____	_____	_____

* Not aware that any engineering controls are needed

☐ Mark (X) this box if you attach a continuation sheet.

9.13 Describe all equipment or process modifications you have made within the 3 years prior to the reporting year that have resulted in a reduction of worker exposure to the listed substance. For each equipment or process modification described, state the percentage reduction in exposure that resulted. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Batch - Polyurethane Polymerization

Work area 1

Equipment or Process Modification	Reduction in Worker Exposure Per Year (%)

No Modifications

☐ Mark (X) this box if you attach a continuation sheet.

PART D PERSONAL PROTECTIVE AND SAFETY EQUIPMENT

9.14 Describe the personal protective and safety equipment that your workers wear or use in each work area in order to protect or eliminate their exposure to the hazard substance. Photocopy this question and complete it separately for each process type and work area.

CBI

☐ Process type Batch - Polyurethane Polymerization

Work area 1

<u>Equipment Types</u>	<u>Wear or Use (Y/N)</u>
Respirators	<u>N</u>
Safety goggles/glasses	<u>Y</u>
Face shields	<u>N</u>
Coveralls	<u>Y</u>
Bib aprons	<u>N</u>
Chemical-resistant gloves	<u>Y</u>
Other (specify)	
_____	_____
_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

- 9.15 If workers use respirators when working with the listed substance, specify for each process type, the work areas where the respirators are used, the type of respirators used, the average usage, whether or not the respirators were fit tested, and the type and frequency of the fit tests. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type Batch - Polyurethane Polymerization

Work Area	Respirator Type	Average Usage ¹	Fit Tested (Y/N)	Type of Fit Test ²	Frequency of Fit Tests (per year)
	N/A				

¹Use the following codes to designate average usage:

A = Daily
 B = Weekly
 C = Monthly
 D = Once a year
 E = Other (specify) _____

²Use the following codes to designate the type of fit test:

QL = Qualitative
 QT = Quantitative

☐ Mark (X) this box if you attach a continuation sheet.

PART E WORK PRACTICES

- 9.19 Describe all of the work practices and administrative controls used to reduce or eliminate worker exposure to the listed substance (e.g., restrict entrance only to authorized workers, mark areas with warning signs, insure worker detection and monitoring practices, provide worker training programs, etc.). Photocopy this question and complete it separately for each process type and work area.

CBI

☐

Process type Batch - Polyurethane Polymerization

Work area 1

Area is not restricted

- 9.20 Indicate (X) how often you perform each housekeeping task used to clean up routine leaks or spills of the listed substance. Photocopy this question and complete it separately for each process type and work area.

Process type Batch - Polyurethane Polymerization

Work area 1

Housekeeping Tasks	Less Than Once Per Day	1-2 Times Per Day	3-4 Times Per Day	More Than 4 Times Per Day
Sweeping				
Vacuuming				
Water flushing of floors	X			
Other (specify)				

☐ Mark (X) this box if you attach a continuation sheet.

9.21 Do you have a written medical action plan for responding to routine or emergency exposure to the listed substance?

Routine exposure

Yes 1

No 2

Emergency exposure

Yes 1

No 2

If yes, where are copies of the plan maintained?

Routine exposure: _____

Emergency exposure: _____

9.22 Do you have a written leak and spill cleanup plan that addresses the listed substance? Circle the appropriate response.

Yes 1

No (2)

If yes, where are copies of the plan maintained? _____

Has this plan been coordinated with state or local government response organizations? Circle the appropriate response.

Yes 1

No 2

9.23 Who is responsible for monitoring worker safety at your facility? Circle the appropriate response.

Plant safety specialist 1

Insurance carrier 2

OSHA consultant 3

Other (specify) _____ 4

☐ Mark (X) this box if you attach a continuation sheet.

SECTION 10 ENVIRONMENTAL RELEASE

General Instructions:

Complete Part E (questions 10.23-10.35) for each non-routine release involving the listed substance that occurred during the reporting year. Report on all releases that are equal to or greater than the listed substance's reportable quantity value, RQ, unless the release is federally permitted as defined in 42 U.S.C. 9601, or is specifically excluded under the definition of release as defined in 40 CFR 302.3(22). Reportable quantities are codified in 40 CFR Part 302. If the listed substance is not a hazardous substance under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and, thus, does not have an RQ, then report releases that exceed 2,270 kg. If such a substance, however, is designated as a CERCLA hazardous substance, then report those releases that are equal to or greater than the RQ. The facility may have answered these questions or similar questions under the Agency's Accidental Release Information Program and may already have this information readily available. Assign a number to each release and use this number throughout this part to identify the release. Releases over more than a 24-hour period are not single releases, i.e., the release of a chemical substance equal to or greater than an RQ must be reported as a separate release for each 24-hour period the release exceeds the RQ.

For questions 10.25-10.35, answer the questions for each release identified in question 10.23. Photocopy these questions and complete them separately for each release.

PART A GENERAL INFORMATION

10.01 Where is your facility located? Circle all appropriate responses.

CBI

- ☐ Industrial area 1
- Urban area 2
- Residential area 3
- Agricultural area 4
- Rural area 5
- Adjacent to a park or a recreational area 6
- Within 1 mile of a navigable waterway 7
- Within 1 mile of a school, university, hospital, or nursing home facility 8
- Within 1 mile of a non-navigable waterway 9
- Other (specify) 10

☐ Mark (X) this box if you attach a continuation sheet.

10.02 Specify the exact location of your facility (from central point where process unit is located) in terms of latitude and longitude or Universal Transverse Mercader (UTM) coordinates.

Latitude ° ' "

Longitude ° ' "

UTM coordinates Zone _____, Northing _____, Easting _____

10.03 If you monitor meteorological conditions in the vicinity of your facility, provide the following information.

Average annual precipitation inches/year

Predominant wind direction

10.04 Indicate the depth to groundwater below your facility.

Depth to groundwater meters

10.05 For each on-site activity listed, indicate (Y/N/NA) all routine releases of the listed substance to the environment. (Refer to the instructions for a definition of Y, N, and NA.)

CBI

☐

On-Site Activity

Environmental Release

Manufacturing

Air

Water

Land

NA

NA

NA

Importing

NA

NA

NA

Processing

N

N

N

Otherwise used

NA

NA

NA

Product or residual storage

N

N

N

Disposal

N

N

N

Transport

N

N

N

☐ Mark (X) this box if you attach a continuation sheet.

10.06 Provide the following information for the listed substance and specify the level of precision for each item. (Refer to the instructions for further explanation and an example.)

CBI

☐

Quantity discharged to the air	NA	kg/yr ±	__ %
Quantity discharged in wastewaters	NA	kg/yr ±	__ %
Quantity managed as other waste in on-site treatment, storage, or disposal units	NA	kg/yr ±	__ %
Quantity managed as other waste in off-site treatment, storage, or disposal units	NA	kg/yr ±	__ %

☐ Mark (X) this box if you attach a continuation sheet.

10.08 Describe the control technologies used to minimize release of the listed substance for each process stream containing the listed substance as identified in your process block or residual treatment block flow diagram(s). Photocopy this question and complete it separately for each process type.

CBI

☐ Process type Batch - Polyurethane Polymerization

NA - Essential a closed system		
<u>Stream ID Code</u>	<u>Control Technology</u>	<u>Percent Efficiency</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

☐ Mark (X) this box if you attach a continuation sheet.

PART B RELEASE TO AIR

- 10.09 Point Source Emissions -- Identify each emission point source containing the listed substance in terms of a Stream ID Code as identified in your process block or residual treatment block flow diagram(s), and provide a description of each point source. Do not include raw material and product storage vents, or fugitive emission sources (e.g., equipment leaks). Photocopy this question and complete it separately for each process type.

CBI

☐

Process type

Batch - Polyurethane Polymerization

Point Source
ID Code

Description of Emission Point Source

NA

☐ Mark (X) this box if you attach a continuation sheet.

☐ Mark (X) this box if you attach a continuation sheet.

10.10 Emission Characteristics - - Characterize the emissions for each Point Source ID Code identified in question 10.09 by completing the following table.

CBI

<input type="checkbox"/>	Point Source ID Code	Physical State ¹	Average Emissions (kg/day)	Frequency ² (days/yr)	Duration ³ (min/day)	Average Emission Factor ⁴	Maximum Emission Rate (kg/min)	Maximum Emission Rate Frequency (events/yr)	Maximum Emission Rate Duration (min/event)

¹Use the following codes to designate physical state at the point of release:
G = Gas; V = Vapor; P = Particulate; A = Aerosol; O = Other (specify) _____

²Frequency of emission at any level of emission

³Duration of emission at any level of emission

⁴Average Emission Factor — Provide estimated (\pm 25 percent) emission factor (kg of emission per kg of production of listed substance)

10.12 If the listed substance is emitted in particulate form, indicate the particle size distribution for each Point Source ID Code identified in question 10.09. Photocopy this question and complete it separately for each emission point source.

CBI

☐

NA

Point source ID code

Size Range (microns)

Mass Fraction (% ± % precision)

< 1

≥ 1 to < 10

≥ 10 to < 30

≥ 30 to < 50

≥ 50 to < 100

≥ 100 to < 500

≥ 500

Total = 100%

☐ Mark (X) this box if you attach a continuation sheet.

PART C FUGITIVE EMISSIONS

10.13 Equipment Leaks -- Complete the following table by providing the number of equipment types listed which are exposed to the listed substance and which are in service according to the specified weight percent of the listed substance passing through the component. Do this for each process type identified in your process block or residual treatment block flow diagram(s). Do not include equipment types that are not exposed to the listed substance. If this is a batch or intermittently operated process, give an overall percentage of time per year that the process type is exposed to the listed substance. Photocopy this question and complete it separately for each process type.

CBI

☐ Process type Batch - Polyurethane Polymerization

Percentage of time per year that the listed substance is exposed to this process type %

Equipment Type	Number of Components in Service by Weight Percent of Listed Substance in Process Stream					Greater than 99%
	Less than 5%	5-10%	11-25%	26-75%	76-99%	
Pump seals ¹	<u>NONE - EQUIPMENT TRANSFERRED TO DIFFERENT LOCATION</u>					
Packed						
Mechanical						
Double mechanical ²						
Compressor seals ¹						
Flanges						
Valves						
Gas ³						
Liquid						
Pressure relief devices ⁴ (Gas or vapor only)						
Sample connections						
Gas						
Liquid						
Open-ended lines ⁵ (e.g., purge, vent)						
Gas						
Liquid						

¹List the number of pump and compressor seals, rather than the number of pumps or compressors

10.13 continued on next page

☐ Mark (X) this box if you attach a continuation sheet.

10.13 (continued)

² If double mechanical seals are operated with the barrier (B) fluid at a pressure greater than the pump stuffing box pressure and/or equipped with a sensor (S) that will detect failure of the seal system, the barrier fluid system, or both, indicate with a "B" and/or an "S", respectively

³ Conditions existing in the valve during normal operation

⁴Report all pressure relief devices in service, including those equipped with control devices

⁵Lines closed during normal operation that would be used during maintenance operations

10.14 Pressure Relief Devices with Controls -- Complete the following table for those pressure relief devices identified in 10.13 to indicate which pressure relief devices in service are controlled. If a pressure relief device is not controlled, enter "None" under column c.

CBI

[]

[illegible]

¹Refer to the table in question 10.13 and record the percent range given under the heading entitled "Number of Components in Service by Weight Percent of Listed Substance" (e.g., <5%, 5-10%, 11-25%, etc.)

²The EPA assigns a control efficiency of 100 percent for equipment leaks controlled with rupture discs under normal operating conditions. The EPA assigns a control efficiency of 98 percent for emissions routed to a flare under normal operating conditions.

☐ Mark (X) this box if you attach a continuation sheet.

10.15 Equipment Leak Detection -- If a formal leak detection and repair program is in place, complete the following table regarding those leak detection and repair procedures. Photocopy this question and complete it separately for each process type.

CBI

N/A- EQUIPMENT HAS BEEN TRANSFERRED TO DIFFERENT LOCATION

☐ Process type Batch - Polyurethane Polymerization

Equipment Type	Leak Detection Concentration (ppm or mg/m ³) Measured at Inches from Source	Detection Device ¹	Frequency of Leak Detection (per year)	Repairs Initiated (days after detection)	Repairs Completed (days after initiated)
Pump seals					
Packed					
Mechanical					
Double mechanical					
Compressor seals					
Flanges					
Valves					
Gas					
Liquid					
Pressure relief devices (gas or vapor only)					
Sample connections					
Gas					
Liquid					
Open-ended lines					
Gas					
Liquid					

¹Use the following codes to designate detection device:

POVA = Portable organic vapor analyzer

FPM = Fixed point monitoring

0 = Other (specify) _____

☐ Mark (X) this box if you attach a continuation sheet.

- 10.16 Raw Material, Intermediate and Product Storage Emissions - - Complete the following table by providing the information on each liquid raw material, intermediate, and product storage vessel containing the listed substance as identified in your process block or residual treatment block flow diagram(s).

CBI

☐

Vessel Type ¹	Floating Roof Seals ²	Composition of Stored Materials ³	Throughput (liters per year)	Vessel	Vessel	Vessel	Vessel Height (m)	Vessel Volume (l)	Vessel Emission Controls ⁴	Design Flow Rate ⁵	Vent Diameter (cm)	Control Efficiency (%)	Basis for Estimate ⁶
				Filling Rate (gpm)	Filling Duration (min)	Inner Diameter (m)							
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

¹Use the following codes to designate vessel type:

F = Fixed roof
 CIF = Contact internal floating roof
 NCIF = Noncontact internal floating roof
 EFR = External floating roof
 P = Pressure vessel (indicate pressure rating)
 H = Horizontal
 U = Underground

²Use the following codes to designate floating roof seals:

MS1 = Mechanical shoe, primary
 MS2 = Shoe-mounted secondary
 MS2R = Rim-mounted, secondary
 LM1 = Liquid-mounted resilient filled seal, primary
 LM2 = Rim-mounted shield
 LMW = Weather shield
 VM1 = Vapor mounted resilient filled seal, primary
 VM2 = Rim-mounted secondary
 VMW = Weather shield

³Indicate weight percent of the listed substance. Include the total volatile organic content in parenthesis

⁴Other than floating roofs

⁵Gas/vapor flow rate the emission control device was designed to handle (specify flow rate units)

⁶Use the following codes to designate basis for estimate of control efficiency:

C = Calculations
 S = Sampling

☐ Mark (X) this box if you attach a continuation sheet.

PART E NON-ROUTINE RELEASES

10.23 Indicate the date and time when the release occurred and when the release ceased or was stopped. If there were more than six releases, attach a continuation sheet and list all releases.

<u>Release</u>	<u>Date Started</u>	<u>Time (am/pm)</u>	<u>Date Stopped</u>	<u>Time (am/pm)</u>
1	NONE			
2				
3				
4				
5				
6				

10.24 Specify the weather conditions at the time of each release.

<u>Release</u>	<u>Wind Speed (km/hr)</u>	<u>Wind Direction</u>	<u>Humidity (%)</u>	<u>Temperature (°C)</u>	<u>Precipitation (Y/N)</u>
1					
2					
3					
4					
5					
6					

☐ Mark (X) this box if you attach a continuation sheet.

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